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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/705,213

11/07/2003

Clifford F. Knollenberg

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EXAMINER

KING, BRADLEY T

ART UNIT

PAPER NUMBER

3683

MAIL DATE

DELIVERY MODE

05/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/705,213

Applicant(s)

KNOLLENBERG ET AL.

Examiner

Bradley T. King

Art Unit

3683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-8 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-8 and 10-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/20/2007 has been entered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2-8 and 10-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claim 2 has been amended to recite "each torsion element is not substantially parallel to the substrate when the actuator body is elevated above the substrate in a motion substantially perpendicular to the substrate". The original disclosure fails to support this limitation nor

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is the scope readily apparent. Note figure 3 appears show torsion elements which are parallel to the substrate.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-8 and 10-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites "not substantially parallel". The scope of this limitation is not clear. For instance, it is not clear if a perfectly parallel orientation can be considered "not substantially" parallel.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2-3, 7 and 10-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hagelin et al (US# 6283601).

Hagelin discloses all the limitations of the instant claims including; an actuator body 101 connected with a suspension system; and the suspension system connected with the substrate, the suspension system comprising: a set of one or more flexures 102, each flexure connecting the actuator body with the substrate; and a set of one or more torsional elements 108, wherein each torsional element connects a corresponding flexure with the actuator body, each torsional element having a length being greater than the width of the torsional element, wherein each torsional element has an angle of twist per unit moment substantially equal to a first value, and a set of one or more anchor points 107.

Claims 2-3, 6-8 and 10-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Aksyuk et al et al (US# 6366414).

Aksuyuk et al discloses all the limitations of the instant claims including; an actuator body 17 or 25 connected with a suspension system; and the suspension system connected with the substrate 13, the suspension system comprising: a set of one or more flexures 18 and/or 19 and/or 20, each flexure connecting the actuator body with the substrate; and a set of one or more torsional elements (22 or serpentine elements in figure 2), wherein each torsional element connects a corresponding flexure with the actuator body, each torsional element having a length being greater than the width of the torsional element. See figures 1-2 and figures 6-8.

Regarding claim 6, see column 6, lines 15-20.

Regarding claim 16, note that the anchor points are inherently stiffer do to their larger size. Also note the torsional elements are clearly designed to exhibit low rigidity.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagelin et al (US# 6283601) in view of Miller et al (US# 6545385).

Regarding claims 4-6, Hagelin discloses all the limitations of the instant claims with exception to the explicit dimensions. Hagelin et al is silent as to the dimensions but clearly appreciates the significance of the torsional stiffness (column 4, lines 50-55). Miller et al disclose a similar device and further demonstrate that compliant members of the recited dimensions are known in the art. See column 21, lines 60-63. It would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the optimum dimensions of Hagelin et al through routine experimentation and/or design, as known and demonstrated by Miller et al, to provide the desired flexions, while maintaining the necessary strength for proper operation. Also note In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

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Regarding claim 8, Hagelin et al discloses all the limitations of the instant claims with exception to the torsion element being a serpentine form. Miller et al disclose various shapes of compliant elements (col. 21, lines 60-63) and further teach that the serpentine form allows for a reduction in space. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a serpentine shaped torsion element in the device of Hagelin et al as taught by Miller to achieve a reduction in size of the device. Also note applicant's response of 3/1/2005 states that subspecies A and B are not patentably distinct.

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aksuyuk et al (US#6366414) in view of Miller et al (US# 6545385).

Aksuyuk et al discloses all the limitations of the instant claims with exception to the explicit dimensions. Miller et al disclose a similar device and further demonstrate that compliant members of the recited dimensions are known in the art. See column 21, lines 60-63. It would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the optimum dimensions of Aksuyuk et al through routine experimentation and/or design, as known and demonstrated by Miller et al, to provide the desired flexions, while maintaining the necessary strength for proper operation. Also note *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

***Response to Arguments***

Applicant's arguments filed 2/20/2007 have been fully considered but they are not persuasive. Please note the 112 1<sup>st</sup> new matter rejections above. It is not clear how the torsion elements of the instant invention are oriented any differently from that of the prior art.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley T. King whose telephone number is (571) 272-7117. The examiner can normally be reached on 11:00-7:30 M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BTK

 4/29/07  
**BRADLEY KING**  
**PATENT EXAMINER**